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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,461	03/16/2004	Claude E. Cooke, JR.	065055.0108	3213

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Claude E. Cooke, Jr.
197 Lake View Circle
Montgomery, TX 77356

EXAMINER

FULLER, BRYAN A

ART UNIT	PAPER NUMBER
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3676

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/801,461

Applicant(s)

COOKE,, CLAUDE E.

Examiner

Bryan A. Fuller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |



DETAILED ACTION

Claim Objections - 35 USC § 112

1. Claim 14 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 14 repeats word for word the limitation of claim 8 and both claims depend from claim 1.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 5, 7 – 9, 12, 16, 18, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Chang et al (6,342,467).

With respect to claim 1: Chang et al teaches in column 4, lines 33 – 41 and in column 13, line 62 – column 14, line 7 a method for hydraulic fracturing of a formation around a wellbore, the wellbore having a volume, comprising: (a) placing a volume of cross-linked fracturing fluid in the wellbore, the volume of the cross-linked fracturing fluid being less than the volume of the wellbore; (b) displacing the cross-linked fracturing fluid down to a perforation in the casing by a displacement fluid; and (c)

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applying pressure to the displacement fluid by pumping so as to inject the cross-linked fracturing fluid through the perforation into the formation to form a hydraulic fracture.

With respect to claim 5: Chang et al teaches in column 7, lines 2 – 6 and in column 16, lines 9 – 13 a method wherein step (a) is performed by placing the cross-linked fracturing fluid in the wellbore in the form of discrete volumes of fluid in a carrier fluid.

With respect to claim 7: Chang et al teaches a method of placing fluid into a subterranean formation via a wellbore. It is inherent that the fluid, even if pumped to a certain depth, will fall by gravity into the wellbore.

With respect to claim 8: Chang et al teaches in column 11, line 64 – column 12, line 2 a method wherein at least a portion of the cross-linked fracturing fluid contains a proppant.

With respect to claim 9: Chang et al teaches in column 5, lines 4 – 38 and in the abstract a method further comprising the step after step (b) of allowing a time for the cross-linked polymer to decrease in viscosity.

With respect to claim 12: Chang et al teaches in column 11, line 64 – column 12, line 2 a method further comprising the step of performing another operation in the wellbore after step (c) and before a time for the cross-linked fracturing fluid to degrade. In this case the reference taught the addition of a proppant as the other operation.

With respect to claim 16: Chang et al teaches in column 14, lines 18 – 23 a method wherein the cross-linked fracturing fluid comprises a water-soluble polymer.

With respect to claim 18: Chang et al teaches in column 6, lines 36 – 38 a method wherein the cross-linking of the cross-linked fracturing fluid is delayed after a cross-linking material is added to the fluid.

With respect to claim 21: Chang et al teaches in column 8, lines 45 – 52 and in Table B a method wherein the cross-linked fracturing fluid is displaced from the wellbore by a fluid having a lower specific gravity than the specific gravity of the cross-linked fracturing fluid.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 – 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al in view of Holtmyer et al (4,021,355).

With respect to claims 2 - 4: Chang et al teaches the features as previously claimed except for wherein the cross-linked fracturing fluid has a viscosity greater than 500 cP, 2,000 cP, or 10,000 cP. Holtmyer et al teaches in column 2, lines 14 - 26 a method wherein the cross-linked fracturing fluid has a viscosity greater than 500 cP, 2,000 cP, or 10,000 cP. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Chang et al's invention by using a cross-linked fracturing fluid that has a viscosity greater than 500 cP, 2,000 cP,

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or 10,000 cP in view of Holtmyer et al. The motivation for this combination is that the high viscosity fluid can carry great quantities of propping agent into a formation.

6. Claims 6, 19 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al in view of Cameron (4,916,946).

With respect to claims 6, 19 - 20: Chang et al teaches the features as previously claimed except for wherein step (a) is performed by placing the cross-linked fracturing fluid into a stream having a carrier fluid at a concentration such that the cross-linked fracturing fluid flows on a film of carrier fluid and wherein a surfactant or polymer is added to the cross-linked fracturing fluid or the carrier fluid to promote wall slip during flow of the cross-linked fracturing fluid. Cameron teaches in column 6, lines 32 - 59 a method wherein step (a) is performed by placing the cross-linked fracturing fluid into a stream having a carrier fluid at a concentration such that the cross-linked fracturing fluid flows on a film of carrier fluid and wherein a surfactant or polymer is added to the cross-linked fracturing fluid or the carrier fluid to promote wall slip during flow of the cross-linked fracturing fluid. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Chang et al's invention by having a carrier fluid at a concentration such that the cross-linked fracturing fluid flows on a film of carrier fluid and using a surfactant or polymer in the cross-linked fracturing fluid or the carrier fluid to promote wall slip during flow of the cross-linked fracturing fluid in view of Cameron. The motivation for this combination is that it greatly reduces the energy required to pump the fracturing fluids down the well.

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7. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al in view of Jennings, Jr. (5,411,091).

With respect to claims 10 and 11: Chang et al teaches the features as previously claimed except for further comprising the steps of forming a hydraulic fracture in the formation around the wellbore and then performing steps (a) and (b) and injecting the cross-linked fracturing fluid into the hydraulic fracture before and after closure of the hydraulic fracture. Jennings, Jr. teaches in column 3, line 17 – column 4, line 28 a method further comprising the steps of forming a hydraulic fracture in the formation around the wellbore and then performing steps (a) and (b) and injecting the cross-linked fracturing fluid into the hydraulic fracture before and after closure of the hydraulic fracture. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Chang et al's invention by further comprising the steps of forming a hydraulic fracture in the formation around the wellbore and then performing steps (a) and (b) and injecting the cross-linked fracturing fluid into the hydraulic fracture before and after closure of the hydraulic fracture in view of Jennings, Jr. The motivation for this combination is that a more even distribution of proppant within the main area of the fracture can be obtained.

8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al in view of Tjon-Joe-Pin et al (5,566,759).

With respect to claim 13: Chang et al teaches the features as previously claimed except for wherein the other operation in the wellbore is gravel packing. Tjon-Joe-Pin et al teaches in column 4, line 41 – column 5, line 54 a method wherein the other

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operation in the wellbore is gravel packing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Chang et al's invention by using the fluid for gravel packing in view of Tjon-Joe-Pin et al. The motivation for this combination is that it degrades cellulose-containing fluids at a higher pH range or temperature range.

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al in view of Nierode et al (5,890,536).

With respect to claim 15: Chang et al teaches the features as previously claimed except for further comprising the step of transporting ball sealers down the wellbore along with or following the cross-linked fracturing fluid. Nierode et al teaches in column 9, line 57 – column 10, line 7 a method further comprising the step of transporting ball sealers down the wellbore along with or following the cross-linked fracturing fluid. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Chang et al's invention by further comprising the step of transporting ball sealers down the wellbore along with or following the cross-linked fracturing fluid in view of Nierode et al. The motivation for this combination is that ball sealers can be deployed much more rapidly and efficiently than mechanically isolating each interval.

10. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al in view of Holtmyer et al (4,033,415).

With respect to claim 17: Chang et al teaches the features as previously claimed except for wherein the cross-linked fracturing fluid is selected to exhibit syneresis.

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Holtmyer et al teaches in column 5, lines 13 - 27 a method wherein the cross-linked fracturing fluid is selected to exhibit syneresis. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Chang et al's invention by using a cross-linked fracturing fluid that exhibits syneresis in view of Holtmyer et al. The motivation for this combination is that prevents the swelling and migration of clays.

11. Claims 22 – 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. Chang et al discloses the features as claimed. Chang et al does not disclose expressly that the cross-linked fracturing fluid occupies about 200 feet or less in the casing above the perforation, that the volume of the cross-linked fracturing fluid is less than about 50 ft³, or that the volume of the cross-linked fracturing fluid is less than about 250 ft³.


At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the above parameters. Applicant has not disclosed that utilizing the parameters provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either of the above parameters because the parameters would be selected based on the needs for a certain wellbore and subterranean formation. Therefore, it would have been obvious to a person of ordinary skill in the art to modify Chang et al to obtain the invention as specified in claims 22 – 24.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan A. Fuller whose telephone number is (571) 272-8119. The examiner can normally be reached on M - Th 7:30 - 5:00 and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian E. Glessner can be reached on (571) 272-6843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Brian E. Glessner
Supervisory Patent Examiner
Art Unit 3676

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